### Routine Road Maintenance Program Activity Components

|  | Maintenance A                  | Activity  |                    |                              |                                      |                                       |                       |                     | Catego              | ries                       |                       |                       |                                    |          |                  |                  | _                       |
|--|--------------------------------|---|--------------------|------------------------------|--------------------------------------|---------------------------------------|-----------------------|---------------------|---------------------|----------------------------|-----------------------|-----------------------|------------------------------------|----------|------------------|------------------|-------------------------|
| Proximity                                      | Classification                 | Components  | Roadway<br>Surface | Enclosed Drainage<br>Systems | Cleaning Enclosed<br>Drainage System | Open<br>Drainage<br>Systems           | Watercourse & Streams | Stream<br>Crossings | Gravel<br>Shoulders | Street Surface<br>Cleaning | Bridge<br>Maintenance | Snow & Ice<br>Control | Emergency Slide/<br>Washout Repair | Concrete | Sewer<br>Systems | Water<br>Systems | Vegetation<br>Managemen |
| Distant from Stream (>300 ft away)             | Earth/ Surface Work            | Clearing, Drilling, Excavation, Filling,<br>Grading, Grubbing, Cleaning, Grinding or<br>Cutting | х                  | х                            | х                                    | х                                     |                       |                     | х                   | х                          | х                     | х                     | Х                                  | х        | х                | Х                | х                       |
|  | Hydraulic modification         | Channelization or Diking  |                    |                              |                                      | Х                                     |                       |                     |                     |                            |                       |                       | X                                  |          |                  |                  |                         |
|  |                                | Culvert Cleaning  |                    |                              |                                      |                                       |                       |                     |                     |                            |                       |                       |                                    |          |                  |                  |                         |
|  |                                | Culvert Extension, Reduction Replacement  |                    |                              |                                      |                                       |                       |                     |                     |                            |                       |                       |                                    |          |                  |                  |                         |
|  |                                | Deposition of Large Woody Debris  |                    |                              |                                      |                                       |                       |                     |                     |                            |                       |                       | X                                  |          |                  |                  | X                       |
|  |                                | Removal of Large Woody Debris   |                    |                              |                                      |                                       |                       |                     |                     |                            |                       |                       | X                                  |          |                  |                  | Х                       |
|  | Vacatation Madification        | Temporary Water Diversion   |                    |                              |                                      | V                                     |                       |                     | V                   |                            | v                     |                       | X                                  |          | v                | V                | V                       |
|  | Vegetation Modification        | Long Term Removal of Vegetation   |                    |                              |                                      | Х                                     |                       |                     | X                   |                            | X                     |                       | X                                  |          | X                | X                | X                       |
|  |                                | Permanent Removal of Vegetation  Planting Vegetation  |                    | X                            |                                      | X                                     |                       |                     | ^                   |                            | X                     |                       | X                                  | X        | X                | X                | X                       |
|  |                                | Short Term Removal of Vegetation  |                    | X                            |                                      | X                                     |                       |                     |                     |                            | X                     | X                     | ^                                  | X        | X                | X                | X                       |
|  | Paving/Concrete                | Addition of Impervious Surface  | Х                  | Α                            |                                      | , , , , , , , , , , , , , , , , , , , |                       |                     |                     |                            | Α                     | Λ                     |                                    | Α        | Α                |                  | ^                       |
|  | 1 avilig/Concrete              | Maintenance of existing   | X                  |                              |                                      |                                       |                       |                     |                     |                            |                       |                       |                                    |          |                  |                  |                         |
|  | Chemical                       | Fuel & Industrial Fluids Present  | X                  | X                            | X                                    | X                                     |                       |                     | X                   | X                          | X                     | X                     | X                                  | Х        | Х                | X                | Х                       |
|  | 2.10111001                     | Painting  | X                  |                              |                                      |                                       |                       |                     | 1                   |                            | X                     |                       |                                    |          |                  |                  |                         |
|  |                                | Uncured Concrete, Hot Asphalt or Hot Tar<br>Used  | Х                  |                              |                                      |                                       |                       |                     |                     |                            | х                     |                       | Х                                  | Х        |                  |                  |                         |
|  |                                | O   |                    |                              |                                      |                                       |                       |                     |                     |                            |                       |                       |                                    |          |                  |                  |                         |
| Adjacent to or Above<br>Stream (within 300 ft) | Earth/Surface or cleaning Work | Clearing, Drilling, Excavation, Filling,<br>Grading, Grubbing, Cleaning, Grinding or<br>Cutting | Х                  | X                            | X                                    | Х                                     | ×                     | х                   | Х                   | ×                          | Х                     | Х                     | X                                  | X        | X                | Х                | Х                       |
|  |                                | Heavy Equipment Present   | Х                  | X                            | X                                    | Х                                     | Х                     | Х                   | Х                   | X                          | Х                     | Х                     | X                                  | Х        | Х                | Х                | Х                       |
|  |                                | Shore Defense Works   |                    |                              |                                      |                                       | Х                     | Х                   |                     |                            | X                     |                       | X                                  |          |                  |                  |                         |
|  | Hydraulic modification         | Channelization or Diking  |                    |                              |                                      |                                       |                       |                     |                     |                            |                       |                       |                                    |          |                  |                  |                         |
|  |                                | Culvert Cleaning  |                    |                              |                                      |                                       |                       |                     |                     |                            |                       |                       |                                    |          |                  |                  |                         |
|  |                                | Culvert Extension, Reduction Replacement  |                    |                              |                                      |                                       |                       |                     |                     |                            |                       |                       |                                    |          |                  |                  |                         |
|  |                                | Deposition of Large Woody Debris  |                    |                              |                                      |                                       |                       |                     |                     |                            |                       |                       |                                    |          |                  |                  | Х                       |
|  |                                | Removal of Large Woody Debris   |                    |                              |                                      |                                       |                       |                     |                     |                            |                       |                       |                                    |          |                  |                  | X                       |
|  | V                              | Temporary Water Diversion   |                    |                              |                                      |                                       |                       |                     |                     |                            |                       |                       |                                    |          |                  |                  |                         |
|  | Vegetation Modification        | Long Term Removal of Vegetation  Permanent Removal of Vegetation                                |                    |                              |                                      |                                       | X                     |                     | X                   |                            | X                     |                       | X                                  |          |                  |                  | X                       |
|  |                                | Planting Vegetation   |                    | X                            |                                      | X                                     | X                     | X                   | ^                   |                            | X                     |                       | X                                  |          |                  |                  | X                       |
|  |                                | Short Term Removal of Vegetation  |                    | X                            |                                      | X                                     | X                     | X                   |                     |                            | X                     | X                     | X                                  | Х        | Х                | X                | X                       |
|  | Paving/Concrete                | Addition of Impervious Surface  | Х                  |                              |                                      |                                       |                       |                     |                     |                            |                       |                       |                                    | 1        | 1                |                  | ,                       |
|  | T aving/contoloto              | Maintenance of existing   | X                  |                              |                                      |                                       |                       |                     |                     |                            |                       |                       |                                    |          |                  |                  |                         |
|  | Structure Work                 | Bridge Debris Removal   |                    |                              |                                      |                                       | Х                     | Х                   |                     |                            | Х                     |                       | X                                  |          |                  |                  |                         |
|  |                                | Bridge Deck work/general repair   |                    |                              |                                      |                                       |                       |                     |                     |                            | Х                     |                       |                                    |          |                  |                  |                         |
|  | Chemical                       | Fuel & Industrial Fluids Present  | Х                  | Х                            | Х                                    | Х                                     | Х                     | Х                   | Х                   | Х                          | Х                     | Х                     | X                                  | Х        | Х                | Х                | Х                       |
|  |                                | High Pressure Washing/Flushing  |                    | Х                            | Х                                    |                                       |                       |                     |                     | X                          | Х                     | Х                     |                                    |          | Х                | Х                |                         |
|  |                                | Painting  | Х                  |                              |                                      |                                       |                       |                     |                     |                            | Х                     |                       |                                    |          |                  |                  |                         |
|  |                                | Uncured Concrete, Hot Asphalt or Hot Tar Used   | Х                  |                              |                                      |                                       |                       |                     |                     |                            | х                     |                       | Х                                  | Х        |                  |                  |                         |
| Instream                                       | Earth Work                     | Drilling, Excavation, & Filling   |                    |                              |                                      |                                       | X                     | X                   |                     |                            | X                     |                       | X                                  |          |                  |                  |                         |
|  |                                | Heavy Equipment Present   |                    |                              |                                      |                                       | X                     | X                   |                     |                            |                       |                       | X                                  |          |                  |                  |                         |
|  |                                | Manual Labor Present  |                    |                              |                                      |                                       | X                     | X                   |                     |                            |                       |                       | X                                  |          | 1                |                  | Х                       |
|  |                                | Shore Defense Works   |                    |                              |                                      |                                       | X                     | X                   |                     |                            |                       |                       |                                    |          |                  |                  |                         |
|  | Hydraulic modification         | Channelization or Diking  |                    |                              |                                      |                                       | Х                     | Х                   |                     |                            |                       |                       | Х                                  | İ        | İ                |                  |                         |
|  |                                | Culvert Cleaning  |                    |                              |                                      |                                       | Х                     | Х                   |                     |                            |                       |                       | Х                                  |          |                  |                  |                         |
|  |                                | Culvert Extension, Reduction  |                    |                              |                                      |                                       | Х                     | х                   |                     |                            |                       |                       |                                    |          |                  |                  |                         |
|  |                                | Replacement  Deposition of Large Woody Debris   |                    |                              |                                      |                                       | X                     | X                   |                     |                            | Х                     |                       | X                                  | 1        | 1                |                  | X                       |
|  |                                | Removal of Large Woody Debris   |                    |                              |                                      |                                       | X                     | X                   |                     |                            | X                     |                       | X                                  | 1        | 1                |                  | ^                       |
|  |                                | Temporary Water Diversion   |                    |                              |                                      |                                       | X                     | X                   |                     |                            | X                     |                       | X                                  |          |                  |                  |                         |
|  | Structure Work                 | Barge Present   |                    |                              |                                      |                                       | X                     | X                   |                     |                            | X                     |                       | X                                  |          | 1                |                  |                         |
|  |                                | Bridge Debris Removal   |                    |                              |                                      |                                       | X                     | X                   |                     |                            | X                     |                       | X                                  |          |                  |                  |                         |
|  |                                | Falsework, Cofferdam, or Other<br>Temporary Structure Placement                                 |                    |                              |                                      |                                       |                       | Х                   |                     |                            | Х                     |                       |                                    |          |                  |                  |                         |
| 1  |                                | Pier, Footing, abutment scour   |                    |                              |                                      |                                       |                       |                     |                     |                            | Х                     |                       |                                    |          |                  |                  |                         |
|  | Chemical                       | Fuel & Industrial Fluids Present  |                    |                              |                                      |                                       | Х                     | Х                   |                     |                            | Х                     |                       | Х                                  |          |                  |                  |                         |
|  |                                | High Pressure Washing/Flushing  |                    |                              |                                      |                                       |                       | Х                   |                     |                            | Х                     |                       |                                    |          |                  |                  |                         |
|  |                                | Uncured Concrete Used   |                    |                              |                                      |                                       |                       |                     |                     |                            | Х                     |                       |                                    |          |                  |                  |                         |
|  |                                | Treated woods (in stream only)  |                    | -                            | -                                    |                                       |                       |                     |                     |                            | Х                     |                       |                                    |          |                  |                  |                         |

#### Activities and Effects Without Guidelines Implemented

#### Effect Key

- (+) Likely to restore baseline indicator
  (-) Likely to degrade baseline indicator
- (U) Unknown effect
- (N) Not Likely to Adversely Affect

| Maintenance Activity               |                                   |   |               |          |               |          |           |                |           |         |        |             |         |                |            |             |             |               |          |         |             |           |               |
|------------------------------------|-----------------------------------|---|---------------|----------|---------------|----------|-----------|----------------|-----------|---------|--------|-------------|---------|----------------|------------|-------------|-------------|---------------|----------|---------|-------------|-----------|---------------|
| ,                                  |                                   |   |               |          |               | Physical |           | Large<br>Woody | Pool      | Pool    | Large  | Off Channel |         | Width/         | Streambank | Channel     | Flood Plain | Peak &        | Drainage | Road    | Disturbance | Riparian  | Recruitment & |
| Proximity                          | Classification                    | Components  | Temperature S | Sediment | Contamination | Barriers | Substrate | Debris         | Frequency | Quality | Pools  | Habitat     | Refugia | Depth<br>Ratio | Condition  | Confinement |             | Base<br>Flows |          | Density | History     | Corridor  | Pop-Hetro     |
| Distant from Stream (>300 ft away) | Earth/ Surface Work               | Clearing, Drilling, Excavation, Filling,<br>Grading, Grubbing, Cleaning, grinding or<br>cutting | -             | -        | U / -         | N        | -         | N              | N         | N       | Ν      | -           | -       | N              | N          | N           | N           | U             | -        | N       | -           | -         | U             |
|                                    | Hydraulic modification            | Channelization or Diking  | N             | N        | U / -         | N        | N         | N              | N         | N       | N      | N           | N       | N              | N          | N           | N           | N             | U        | N       | U           | N         | U             |
|                                    |                                   | Culvert Cleaning  | N             | N        | U / -         | N        | N         | N              | N         | N       | N      | N           | N       | N              | N          | N           | N           | +             | N        | N       | U           | N         | U             |
|                                    |                                   | Culvert Extension, Reduction  | N             | N        | U / -         | N        | N         | N              | N         | N       | N      | N           | N       | N              | N          | N           | N           | N             | N        | N       | U           | N         | U             |
|                                    |                                   | Culvert Replacement   | N             | N        | U / -         | N        | N         | N              | N         | N       | N      | N           | N       | N              | N          | N           | N           | N             | N        | N       | U           | N         | U             |
|                                    |                                   | Deposition of Large Woody Debris  | N             | N        | U / -         | N        | N         | N              | N         | N       | N      | N           | N       | N              | N          | N           | N           | N             | N        | N       | U           | N         | U             |
|                                    |                                   | Removal of Large Woody Debris   | N             | N        | U / -         | N        | N         | N              | N         | N       | N      | N           | N       | N              | N          | N           | N           | N             | N        | N       | U           | N         | U             |
|                                    |                                   | Temporary Water Diversion   | N             | N        | U / -         | N        | N         | N              | N         | N       | N      | N           | N       | N              | N          | N           | N           | N             | N        | N       | U           | N         | U             |
|                                    | Vegetation Modification           | Long Term Removal of Vegetation   | -             | -        | U             | N        | -         | -              | -         | -       | -      | -           | -       | -              | -          |             | N           | -             | -        | N       | -           | -         | U             |
|                                    |                                   | Permanent Removal of Vegetation   | -             | -        | U             | N        | -         | -              | -         | -       | -      | -           | -       | -              | -          | -           | N           | -             | -        | N       | -           | -         | U             |
|                                    |                                   | Planting Vegetation   | +             | +        | U             | N        | +         | +              | +         | +       | +      | +           | +       | +              | +          | +           | N           | +             | +        | N       | +           | +         | U             |
|                                    | 5 : 10 : 1                        | Short Term Removal of Vegetation  | -             | -        | U             | N        | -         | N              | N         | N       | N      | N           | N       | N              | N          | N           | N           | -             | N        | N       | U           | U         | U             |
|                                    | Paving/Concrete                   | Addition of Impervious Surface  | U<br>N        |          | -             | N<br>N   | -         | N<br>N         | N<br>N    | N<br>N  | N      | -<br>N      | -<br>N  | N<br>N         | N<br>N     | N<br>N      | -<br>N      | -<br>N        | -<br>N   | -<br>N  | U           | -<br>N    | U             |
|                                    | Chamical                          | Maintenance of existing   | N N           | N        | -             | N        | N         | N              | N         | N       | N<br>N | N           | N       | N              | N          | N<br>N      | N           | N             | N        | N       | N           | N         | N             |
|                                    | Chemical                          | Fuel & Industrial Fluids Present Painting   | N             | N        | -             | N        | N         | N              | N         | N       | N      | N           | N       | N              | N          | N<br>N      | N N         | N             | N        | N       | N<br>N      | N         | N             |
|                                    |                                   | Uncured Concrete, Hot Asphalt or Hot Tar<br>Used  | N             | N        | -             | N        | N         | N              | N         | N       | N      | N           | N       | N              | N          | N           | N           | N             | N        | N       | N           | N         | N             |
| Adjacent to or<br>Above Stream     | Earth/Surface or cleaning<br>Work | Clearing, Drilling, Excavation, Filling,<br>Grading, Grubbing, Cleaning, grinding or<br>cutting | -             | -        | U / -         | N        | -         | N              | U         | U       | U      | -           | -       | U              | -          | -           | -           | -             | -        | N       | U           | -         | U             |
| (within 300 ft)                    |                                   | Heavy Equipment Present   | N             | -        | -             | N        | -         | N              | N         | N       | N      | N           | N       | N              | -          | N           | N           | N             | N        | N       | U           | N         | U             |
|                                    |                                   | Shore Defense Works   | N             | -        | U / -         | N / -    | -         | N              | N         | N       | N      | -           | N       | N              | -          | -           | -           | -             | N        | N       | -           | -         | U             |
|                                    | Hydraulic modification            | Channelization or Diking  | -             | -        | U / -         | U        | -         | U/ -           | -         | -       | -      | -           | -       | -              | -          | -           | -           | -             | U        | N       | U           | U / -     | U             |
|                                    |                                   | Culvert Cleaning  | -             | -        | -             | N        | -         | N              | N         | -       | -      | -           | -       | N              | N          | N           | -           | -             | N        | N       | U           | N         | U             |
|                                    |                                   | Culvert Extension, Reduction  | U             | -        | U / -         | U / -    | -         | U              | U         | U       | U      | U           | U       | -              | U          | -           | -           | U             | U        | N       | U           | U         | U             |
|                                    |                                   | Culvert Replacement   | -             | -        | -             | U / -    | -         | -              | -         | -       | -      | N           | N       | -              | -          | -           | -           | -             | U        | N       | U           | U         | U             |
|                                    |                                   | Deposition of Large Woody Debris  | +             | -        | U / -         | U / -    | U / -     | +              | U         | U       | U      | U           | U       | N              | -/+        | N           | N           | U             | N        | N       | U           | U         | U             |
|                                    |                                   | Removal of Large Woody Debris   | -             | -        | U / -         | N        | -         | -              | U         | -       | U      | U           | U       | N              | U          | U           | N           | U             | N        | N       | U           | U         | U             |
|                                    | Manadadian Maniffrantian          | Temporary Water Diversion   | - +           |          | -<br>U        | U        | -         | N              | N         | N       | N      | N           | N       | N              | N          | N           | N           | N             | N        | N       | U           | N         | U             |
|                                    | Vegetation Modification           | Long Term Removal of Vegetation   | -             | -        | U             | N<br>N   | -         | U / -          | -         | -       | -      | -           | -       | -              | -          | -           | -           | -             | -        | N<br>N  | -           | -         | U             |
|                                    |                                   | Permanent Removal of Vegetation Planting Vegetation   | +             | +        | U             | N        | +         | +              | +         | +       | +      | +           | +       | +              | +          | +           | U           | +             | +        | N       | +           | +         | U             |
|                                    |                                   | Short Term Removal of Vegetation  |               | -        | U             | N        | U / -     | U/ -           | U         | U/ -    | U      | -           | -       | N              | -          | N           | -           |               | -        | N       | U           | -         | U             |
|                                    | Paving/Concrete                   | Addition of Impervious Surface  | _             | _        | -             | U        | -         | N              | -         | -       | -      | _           | _       | -              | _          | -           | _           |               | _        | -       | U           | _         | U             |
|                                    | g                                 | Maintenance of existing   | U             | U        | _             | N        | U         | N              | N         | U       | N      | N           | N       | N              | U          | N           | N           | N             | N        | N       | U           | N         | U             |
|                                    | Structure Work                    | Bridge Debris Removal   | N             | -        | -             | N        | -         | N              | N         | -       | -      | N           | N       | N              | N          | N           | N           | N             | N        | N       | U           | N         | U             |
|                                    |                                   | Bridge Deck work/general repair   | N             | -        | -             | N        | -         | N              | N         | -       | -      | N           | N       | N              | N          | N           | N           | N             | N        | N       | U           | N         | U             |
|                                    | Chemical                          | Fuel & Industrial Fluids Present  | N             | N        | -             | N        | N         | N              | N         | -       | N      | N           | N       | N              | N          | N           | N           | N             | N        | N       | N           | N         | N             |
|                                    |                                   | High Pressure Washing/Flushing  | -             | -        | -             | N        | -         | N              | N         | -       | Ν      | N           | N       | N              | N          | N           | N           | N             | N        | N       | N           | N         | N             |
|                                    |                                   | Painting  | N             | N        | -             | N        | N         | N              | N         | -       | Ν      | N           | N       | N              | N          | N           | N           | N             | N        | N       | N           | N         | N             |
|                                    |                                   | Uncured Concrete, Hot Asphalt or Hot Tar<br>Used  | -             | N        | -             | N        | -         | N              | N         | -       | N      | N           | N       | N              | N          | N           | N           | N             | N        | N       | N           | N         | N             |
| Instream                           | Earth Work                        | Drilling, Excavation, & Filling   | -             | -        | U/ -          | U        | -         | U              | -         | -       | -      | U           | -       | -              | -          | -           | -           | -             | U        | N       | U           | -         | U             |
|                                    |                                   | Heavy Equipment Present   | -             | -        | -             | N        | -         | N              | -         | -       | -      | N           | N       | -              | -          | N           | N           | N             | N        | N       | U           | N         | U             |
|                                    |                                   | Manual Labor Present  | N             | -        | U / -         | N        | -         | N              | N         | N       | N      | N           | N       | N              | U          | N           | N           | N             | N        | N       | U           | N         | U             |
|                                    |                                   | Shore Defense Works   | -             | -        | U / -         | N / -    | -         | U              | -         | -       | -      | -           | -       | -              | -          | -           | U / -       | -             | U        | N       | -           | -         | U             |
|                                    | Hydraulic modification            | Channelization or Diking  | -             | -        | U/ -          | U        | -         | U/ -           | -         | -       | -      | -           | -       | -              | -          | -           | -           |               | U        | N       | -           | N / -     | U             |
|                                    |                                   | Culvert Cleaning  | U             | -        | U / -         | N        | -         | U              | U         | -       | -      | -           | -       | U              | U          | N           | -           | -             | N        | N       | U           | N / +     | U             |
|                                    |                                   | Culvert Extension, Reduction  | -             | -        | U / -         | U / -    | -         | -              | -         | -       | -      | -           | -       | -              | -          | -           | -           | U             | U        | N       | U           | U         | U             |
|                                    |                                   | Culvert Replacement   | -             | -        | U/ -          | U/ -     | -         | U              | -         | -       | U      | U           | U       | U              | -          | -           | -           | -             | U        | N       | U           | U         | U             |
|                                    |                                   | Deposition of Large Woody Debris  | +             | -        | U / -         | U/ -     | -         | +              | +         | U       | U      | -/+         | -/+     | -/+            | -/+        | N           | N           | U             | N        | N       | U           | U         | U             |
|                                    |                                   | Removal of Large Woody Debris   | -             | -        | U / -         | U        | -         |                | U / -     | U/-     | U / -  | U / -       | U / -   | U              | U / -      | U           | N           | U             | N        | N       | U           | U         | U             |
|                                    | Observations 111                  | Temporary Water Diversion   | -             | -        | -             | -        | -         | N              | - NI      | -       | N      | N           | N       | N              | N          | N           | N           | N             | N        | N       | U           | N         | U             |
|                                    | Structure Work                    | Barge Present   | U             | -        | U/ -          | U        | -         | N              | N         | U       | U      | U           | U       | U              | U          | U           | U           | U             | N        | N       | U           | N<br>II./ | U             |
|                                    |                                   | Bridge Debris Removal   | U             | -        | U / -         | N        | -         | -              | U         | -       | -      | -           | U       | -              | -          | -           | U           | U             | N        | N       | U           | U / -     | U             |
|                                    |                                   | Falsework, Cofferdam, or Other Temporary Structure Placement                                    | -             | -        | U / -         | -        | -         | N              | N         | N       | N      | N           | -       | -              | -          | -           | -           | -             | N        | N       | U           | N         | U             |
|                                    |                                   | Pier, Footing, abutment scour   | U             | -        | -             | U        | -         | N              | -         | U       | U / -  | N           | U       | U              | U          | U           | U           | U             | N        | N       | U           | N         | U             |
|                                    | Chemical                          | Fuel & Industrial Fluids Present  | U             | N        | -             | N        | N         | N              | N         | -       | N      | N           | N       | N              | N          | N           | N           | N             | N        | N       | N           | N         | N             |
|                                    |                                   | High Pressure Washing/Flushing  | U             | -        | -             | N        | -         | N              | N         | -       | N      | N           | N       | N              | N          | N           | N           | N             | N        | N       | N           | N         | N             |
|                                    |                                   | Uncured Concrete Used   | U             | -        | -             | N        | -         | N              | N         | -       | N      | N           | N       | N              | N          | N           | N           | N             | N        | N       | N           | N         | N             |
|                                    |                                   | Treated woods (in stream only)  | U             | N        | -             | N        | N         | N              | N         | -       | N      | N           | N       | N              | N          | N           | N           | N             | N        | N       | N           | N         | N             |

### Activities and Effects With the Guidelines Implemented

Effect Key

- (+) Likely to restore baseline indicator
  (-) Likely to degrade baseline indicator
- (U) Unknown effect
- (N) Not Likely to Adversely Affect
- Improvement

| Maintenance Activity               |                                   |   |             |            |               |                      |             |                          |                   |                 |                |                        |          |                          |                         |                        |                             |                         |                     |                 |                        |                      |                         |
|------------------------------------|-----------------------------------|---|-------------|------------|---------------|----------------------|-------------|--------------------------|-------------------|-----------------|----------------|------------------------|----------|--------------------------|-------------------------|------------------------|-----------------------------|-------------------------|---------------------|-----------------|------------------------|----------------------|-------------------------|
| Proximity                          | Classification                    | Components  | Temperature | Sediment   | Contamination | Physical<br>Barriers | Substrate   | Large<br>Woody<br>Debris | Pool<br>Frequency | Pool<br>Quality | Large<br>Pools | Off Channel<br>Habitat | Refugia  | Width/<br>Depth<br>Ratio | Streambank<br>Condition | Channel<br>Confinement | Flood Plain<br>Connectivity | Peak &<br>Base<br>Flows | Drainage<br>Network | Road<br>Density | Disturbance<br>History | Riparian<br>Corridor | Recruitment & Pop-Hetro |
| Distant from Stream (>300 ft away) | Earth/ Surface Work               | Clearing, Drilling, Excavation, Filling,<br>Grading, Grubbing, Cleaning, grinding or<br>cutting | N           | N          | N             | N                    | N           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | U                       | N/U                 | N               | U                      | N / +                | U                       |
|                                    | Hydraulic Modification            | Channelization or Diking  | N           | N          | N             | N                    | N           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | U                   | N               | U                      | N                    | U                       |
|                                    |                                   | Culvert Cleaning  | N           | N          | N             | N                    | N           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | +                       | N                   | N               | U                      | N                    | U                       |
|                                    |                                   | Culvert Extension, Reduction  | N           | N          | N             | N                    | N           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | U                      | N                    | U                       |
|                                    |                                   | Culvert Replacement   | N<br>N      | N<br>N     | N<br>N        | N<br>N               | N<br>N      | N<br>N                   | N<br>N            | N<br>N          | N<br>N         | N<br>N                 | N<br>N   | N<br>N                   | N<br>N                  | N<br>N                 | N<br>N                      | N<br>N                  | N<br>N              | N<br>N          | U                      | N<br>N               | U                       |
|                                    |                                   | Deposition of Large Woody Debris  Removal of Large Woody Debris                                 | N           | N          | N             | N                    | N           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | U                      | N                    | U                       |
|                                    |                                   | Temporary Water Diversion   | N           | N          | N             | N                    | N           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | U                      | N                    | U                       |
|                                    | Vegetation Modification           | Long Term Removal of Vegetation   | -/+         | U          | N             | N                    | U           | N                        | N                 | N               | N              | N                      | N        | N                        | U                       | N                      | N                           | -                       | N                   | N               | U                      | U / +                | U                       |
|                                    |                                   | Permanent Removal of Vegetation   | -           | U          | N             | N                    | U           | N                        | N                 | N               | N              | N                      | N        | N                        | U                       | N                      | N                           | -                       | N                   | N               | U                      | -                    | U                       |
|                                    |                                   | Planting Vegetation   | +           | +          | N             | N                    | +           | +                        | +                 | +               | +              | +                      | +        | +                        | +                       | +                      | N                           | +                       | +                   | N               | +                      | +                    | U                       |
|                                    |                                   | Short Term Removal of Vegetation  | +           | +          | N             | N                    | +           | N                        | N                 | N               | N              | N                      | N        | N                        | +                       | N                      | N                           | N / +                   | N                   | N               | U                      | +                    | U                       |
|                                    | Paving/Concrete                   | Addition of Impervious Surface  | U           | U          | N             | N                    | U           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | U                      | N                    | U                       |
|                                    |                                   | Maintenance of existing   | N           | +          | N             | N                    | +           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | U                      | N                    | U                       |
|                                    | Chemical                          | Fuel & Industrial Fluids Present  | N           | N          | N             | N                    | N           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | N                      | N                    | N                       |
|                                    |                                   | Painting  Uncured Concrete Hot Asphalt or Hot Tar   | N           | N          | N             | N                    | N           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | N                      | N                    | N                       |
|                                    |                                   | Uncured Concrete, Hot Asphalt or Hot Tar<br>Used  | N           | N          | N             | N                    | N           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | N                      | N                    | N                       |
| Adjacent to or<br>Above Stream     | Earth/Surface or cleaning<br>Work | Clearing, Drilling, Excavation, Filling,<br>Grading, Grubbing, Cleaning, grinding or<br>cutting | N/-         | N/ -       | N             | N                    | N/ -        | N                        | U                 | U               | U              | N / -                  | N / -    | N/U                      | N / -                   | N / -                  | N / -                       | N / -                   | N/U                 | N               | U                      | N / +                | U                       |
| (within 300 ft)                    |                                   | Heavy Equipment Present   | N           | N          | N             | N                    | N           | N                        | N                 | N               | N              | N                      | N        | N                        | N / -                   | N                      | N                           | N                       | N                   | N               | U                      | N                    | U                       |
|                                    |                                   | Shore Defense Works   | N           | U / +      | N             | N/+                  | U / +       | N                        | N / +             | N/+             | N / +          | U                      | N / +    | N                        | N / +                   | U / -                  | N / -                       | N / -                   | N                   | N               | U                      | +                    | U                       |
|                                    | Hydraulic Modification            | Channelization or Diking  | -           | -          | N             | N                    | -           | N/+                      | N / -             | N / -           | N / -          | N / -                  | N/-      | N/-                      | N / -                   | N / -                  | N / -                       | N/-                     | N/+                 | N               | U                      | N / -                | U                       |
|                                    |                                   | Culvert Cleaning  | +           | +          | N             | N/+                  | +<br>NI / I | N                        | N                 | +               | +              | +                      | N/+      | N                        | N                       | N<br>U                 | +                           | +                       | N                   | N               | U                      | N / +                | U                       |
|                                    |                                   | Culvert Extension, Reduction  | U<br>+      | N / +<br>+ | N<br>N        | N/+<br>+             | N / +       | U<br>N/+                 | U                 | U<br>+          | U<br>+         | U<br>+                 | U<br>+   | U<br>N/+                 | U / +<br>+              | N / +                  | U<br>+                      | U<br>+                  | U<br>N              | N<br>N          | U                      | U / +                | U                       |
|                                    |                                   | Culvert Replacement  Deposition of Large Woody Debris   | +           | +          | N             | N                    | +           | +                        | U/+               | U / +           | +              | U/+                    | N/+      | N/+                      | N / +                   | N                      | N                           | N                       | N                   | N               | U                      | +                    | U                       |
|                                    |                                   | Removal of Large Woody Debris   | N/-         | N/ -       | N             | N                    | N / -       | N / -                    | U                 | U               | U              | U                      | U        | N                        | U                       | U                      | N                           | N                       | N                   | N               | U                      | U                    | U                       |
|                                    |                                   | Temporary Water Diversion   | N           | N          | N             | U                    | N           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | U                      | N                    | U                       |
|                                    | Vegetation Modification           | Long Term Removal of Vegetation   | -/+         | -/+        | N             | N                    | -/+         | -/+                      | U / +             | -/+             | -/+            | -/+                    | -/+      | -/+                      | N                       | N                      | -/+                         | -/+                     | N                   | N               | U                      | U / +                | U                       |
|                                    |                                   | Permanent Removal of Vegetation   | -           | -          | N             | N                    | -           | -                        | -                 | -               | -              | 1                      | -        | ı                        | -                       | N                      | -                           | ı                       | N                   | N               | U                      | -                    | U                       |
|                                    |                                   | Planting Vegetation   | +           | +          | N             | N                    | +           | +                        | +                 | +               | +              | +                      | +        | +                        | +                       | +                      | U                           | +                       | +                   | N               | +                      | +                    | U                       |
|                                    |                                   | Short Term Removal of Vegetation  | -/+         | U / +      | N             | N                    | U / +       | N / +                    | U / +             | U/+             | U / +          | -/+                    | -/+      | N / +                    | N / +                   | N                      | N / +                       | -/+                     | N                   | N               | U                      | U / +                | U                       |
|                                    | Paving/Concrete                   | Addition of Impervious Surface  | -<br>N      | U          | N             | N                    | U           | N                        | N                 | U               | U              | N                      | N        | N                        | U                       | N                      | N                           | N                       | N                   | N               | U                      | N                    | U                       |
|                                    | Oteratura Wards                   | Maintenance of existing   | N<br>N      | U<br>+     | N<br>N        | N<br>N               | N<br>+      | N<br>N                   | N<br>N            | N<br>+          | N<br>+         | N<br>N                 | N<br>N   | N<br>N                   | N<br>N                  | N<br>N                 | N<br>N                      | N<br>N                  | N<br>N              | N<br>N          | U                      | N<br>N               | U                       |
|                                    | Structure Work                    | Bridge Debris Removal   | N N         | +          | N             | N                    | N           | N                        | N                 | N               | N              | N                      | N        | N                        | N N                     | N                      | N                           | N                       | N                   | N               | U                      | N                    | U                       |
|                                    | Chemical                          | Bridge Deck work/general repair Fuel & Industrial Fluids Present                                | N           | N          | N/-           | N                    | N           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | N                      | N                    | N                       |
|                                    | Chemical                          | High Pressure Washing/Flushing  | N/-         | N/-        | N / -         | N                    | N/-         | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | N                      | N                    | N                       |
|                                    |                                   | Painting  | N           | N          | N / -         | N                    | N           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | N                      | N                    | N                       |
|                                    |                                   | Uncured Concrete, Hot Asphalt or Hot Tar<br>Used  | N/-         | N          | N / -         | N                    | N/-         | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | N                      | N                    | N                       |
|                                    | J                                 | 1   |             |            | l .           |                      |             |                          |                   |                 |                |                        | '        |                          |                         |                        | 1                           |                         | "                   |                 |                        |                      |                         |
| Instream                           | Earth Work                        | Drilling, Excavation, & Filling   | -           | N/ -       | N             | U                    | N/ -        | N                        | U                 | -/+             | -/+            | N                      | -/+      | -                        | -/+                     | -/+                    | -                           | -                       | U                   | N               | U                      | N / +                | U                       |
|                                    |                                   | Heavy Equipment Present   | N           | N          | N             | N                    | N           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | U                      | N                    | U                       |
|                                    |                                   | Manual Labor Present  | N<br>N/     | U          | N             | N N                  | U           | N N                      | N N               | N               | N              | N                      | N N      | N                        | N .                     | N                      | N                           | N                       | N                   | N               | U                      | N                    | U                       |
|                                    | Under die een die ee              | Shore Defense Works   | N / +       | -/+        | N<br>N        | N / +                | -/+         | N/+                      | N / +             | N / +           | N / +          | U                      | N/+      | U                        | +                       | U / -                  | U / -                       | U<br>N/+                | U N/+               | N<br>N          | U                      | -/+                  | U                       |
|                                    | Hydraulic modification            | Channelization or Diking  | -<br>U      | -<br>N/+   | N<br>N        | N<br>N/+             | -<br>N/+    | U                        | -<br>U            | -<br>U/+        | -<br>U/+       | -<br>U/+               | -<br>N/+ | -<br>U                   | N / +                   | -<br>N                 | +                           | N / +                   | N / +               | N<br>N          | U                      | -/+<br>N/+           | U                       |
|                                    |                                   | Culvert Cleaning Culvert Extension, Reduction   | N           | N N        | N             | N/+                  | N N         | U                        | U                 | U               | U              | U                      | U        | U                        | U/+                     | U                      | U                           | U                       | U                   | N               | U                      | U                    | U                       |
|                                    |                                   | Culvert Replacement   | N           | U          | N             | +                    | +           | N / +                    | U                 | +               | +              | U/+                    | N/+      | N / +                    | +                       | N / +                  | N/+                         | +                       | N                   | N               | U                      | U/+                  | U                       |
|                                    |                                   | Deposition of Large Woody Debris  | +           | +          | N             | N                    | +           | +                        | U / +             | U / +           | U / +          | N/+                    | N / +    | N / +                    | N / +                   | N                      | N                           | N                       | N                   | N               | U                      | +                    | U                       |
|                                    |                                   | Removal of Large Woody Debris   | U/ -        | U/-        | N             | N                    | U / -       | -                        | U                 | U / -           | U              | U                      | U        | U                        | U                       | U                      | N                           | N                       | N                   | N               | U                      | U                    | U                       |
|                                    |                                   | Temporary Water Diversion   | U/ -        | N          | N             | N / -                | N           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | U                      | N                    | U                       |
|                                    | Structure Work                    | Barge Present   | U           | U          | N             | U                    | U           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | U                      | N                    | U                       |
|                                    |                                   | Bridge Debris Removal   | U           | N          | N             | N                    | N           | N                        | U                 | N               | N              | N                      | N        | N                        | N                       | N / +                  | N                           | N                       | N                   | N               | U                      | N                    | U                       |
|                                    |                                   | Falsework, Cofferdam, or Other Temporary<br>Structure Placement                                 | U/-         | N / -      | N             | N / -                | N / -       | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | U                      | N                    | U                       |
|                                    | 0                                 | Pier, Footing, abutment scour   | U           | U          | N<br>N/       | N                    | U           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | U                      | N                    | U                       |
|                                    | Chemical                          | Fuel & Industrial Fluids Present  | U           | N<br>N/-   | N / -         | N<br>N               | N<br>N/-    | N<br>N                   | N<br>N            | N<br>N          | N<br>N         | N<br>N                 | N<br>N   | N<br>N                   | N<br>N                  | N<br>N                 | N<br>N                      | N<br>N                  | N<br>N              | N<br>N          | N<br>N                 | N<br>N               | N<br>N                  |
|                                    |                                   | High Pressure Washing/Flushing  | U           | N/-        | N / -         | N<br>N               | N/-<br>N/-  | N<br>N                   | N<br>N            | N<br>N          | N<br>N         | N<br>N                 | N        | N                        | N<br>N                  | N<br>N                 | N                           | N<br>N                  | N                   | N<br>N          | N<br>N                 | N<br>N               | N<br>N                  |
|                                    |                                   | Uncured Concrete Used   | U           |            |               |                      |             |                          |                   |                 |                |                        |          |                          |                         |                        |                             |                         |                     |                 |                        |                      |                         |
|                                    | 1                                 | Treated woods (in stream only)  | U           | N          | N / -         | N                    | N           | N                        | N                 | N               | N              | N                      | N        | N                        | N                       | N                      | N                           | N                       | N                   | N               | N                      | N                    | N                       |

## Best Management Practices to Avoid and Minimize Impact

| Maintenance Activity                           |                                   |   |  | Disturbe  | d Areas   |  |   |   |  |                 |  |  |   |   |   |   | Outc  | ome Ca  | ategorie              | s / Part | 2 BMP                           | s  |  | Equip   | nent/T  | ools  |   |   |  |  |
|--|-----------------------------------|---|--|---|---|--|---|---|--|-----------------|--|--|---|---|---|---|---|---|-----------------------|----------|---------------------------------|--|--|---|---------|---|---|---|--|--|
|  |                                   |   | All exposed & unworked soils shall be stabilized by application of effectiveBMPs, which protect the soil from the erosive forces of raindrop impact & flowing water.  - During the winter season, October through June, no soils shall remain exposed and unworked for more than 2 days.  - During the summer season, July through September, no soils shall remain exposed and unworked for more than 7 days. | As BMP's are no longer needed, they will be removed and the area disturbed by the BMP removal will be cleaned, reseeded, and/or repaired. | After removal of sediments, replant disturbed soils with grasses and small forbs. | Leave vegetative buffer outside of work zone to provide bio-filtration and shading on back slope of ditch. | Leave vegetative buffer of grasses and small forbs between the shoulder and ditch if the area is wide enough. | ave vegetated section in ditchline, where sediment buildup does not impede w or infiltration. | nimize disturbance to riparian vegetation. Mark job site, flag work area, and erate/position equipment to minimize damage to riparian habitat. | nitor water qua | onfor plantings in accordance with permit requirements.  er BMPs are removed clean up accumulated sediments and hydroseed or | lant disturbed area. Store vegetation appropriate for site conditions within riparian areas. | nitor vegetation and stream habitat in accordance with uirements. | nize disturbance of vegetation outside of the shoulder area, I<br>where possible between the gravel and the ditch line for biof | ave BMPs in place and monitor, until vegetation is established (HPA). | others outflows by bio-vegetation techniques or armoring to reduce erosion. | Keep Water from work area.<br>Reduce Soil from becoming Water or Air Borne. | con non recogning was or ne cone. rimeter Protection. | ting.                 | damment. | Habitat Protection/Maintenance. | alling into Water. anup procedures: Routinely inspect equipment, tools and | cles for leaks or damage. Keep cleanu<br>srials, on site to allow prompt cleanup of<br>rections, pipes, hoses and/or valves. | Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. To reduce the potential for discharge of pollutants to watercourses or streams from whiche and equipment maintenance, service and repair operations, follow the practices listed below.  — Prohibit discharge of any waste waters to the stomwater drains. Do not pour material down drains or hose down work areas. Use dry sweeping or damp mopping.  — Remoe build up of to its and grease on equipment.  — Perform equipment and wehicle maintenance in areas that prevent discharges to the storm daminers storm damin system.  — Use drip pans under equipment when maintaining, repaining or servicing in the field.  — Use non-toxic solivents whenever possible. — Clean maintenance area storm drain grases regularly.  | Jo pt   | ian equipment and tools off site in area where pollutants can be contained. | If unable to move tools and equipment off sile, control and remove with a release agent. Before travel, bucket will be secured and have lid on to prevent spills. | When using high-pressure flushing equipment, vacuum out solids to reduce sediment and turbidity from moving downgrade throughout the drainage system. | Control speed of sweeper to minimize airborne particulates and remove maximum amount of debrits. | Use water spray system on sweeper to reduce dust.<br>Use pickup sweepers to remove materials from roadway in assigned areas. |
| Proximity                                      | Classification                    | Components  | M wh   | As  | Aff   | o Le   | dit Ce  | Leav  | Mini   | MO :            | Mc   | g a  | Mo  | Minir<br>strip  | res   | Pro 7   | ş 8   | Filter  | Set                   | 8        | Ha                              | T <sub>o</sub>   | vehi<br>mate<br>conr   | Very Service Control of the Control | Ate     | Cle   | lf u<br>age   | Wh  | am Co  | Use  |
| Distant from Stream (>300 ft. away)            | Vegetation Modification           | Long Term Removal of Vegetation   | х  | х   | х   | х  | х   | х   | х  |                 | _  :   | х  |   | х   |   | х   | x   | ( x   | х                     |          |                                 | _  |  |   |         |   | L   | $\perp$   |  | <u>∟</u> l   |
|  |                                   | Permanent Removal of Vegetation   | х  | х   | х   | х  | х   | х   | х  |                 |  | х х  |   | х   |   |   | х   | ( x   | х                     |          |                                 |  |  |   |         |   |   |   |  |  |
|  | Paving/Concrete                   | Addition of Impervious Surface  |  |   |   |  |   |   |  |                 |  | ፗ  |   |   |   |   | х   | χ   | х                     |          |                                 |  | х  | х   | х       | х   | х   |   |  |  |
|  | Chemical                          | Fuel & Industrial Fluids Present  |  |   |   |  |   |   |  |                 |  | $\perp$  |   |   |   | ,   | х   | х   |                       | х        |                                 |  |  |   |         |   |   |   |  |  |
|  |                                   | Painting  |  |   |   |  |   |   |  |                 |  |  |   |   |   | 2   | х   | х   |                       | х        |                                 |  |  |   |         |   |   |   |  | Щ.   |
|  |                                   | Uncured Concrete, Hot Asphalt or Hot Tar<br>Used  |  |   |   |  |   |   |  |                 |  |  |   |   |   | ,   | х   | x   |                       | x        |                                 |  |  |   |         |   |   |   |  | ,  |
|  |                                   |   |  |   |   |  |   |   |  |                 |  |  |   |   |   |   |   |   |                       |          |                                 |  |  |   |         |   |   |   |  |  |
| Adjacent to or Above<br>Stream (within 300 ft) | Earth/Surface or cleaning<br>Work | Clearing, Drilling, Excavation, Filling, Grading, Grubbing, Cleaning, grinding or cutting | х  | х   | х   | х  | х   | х   | х  | х               | x :  | x x  | x   | х   | х   | x 2   | x x   | ( x   | х                     | :        | х                               | х  |  |   |         |   |   | х   | х  | x x  |
|  |                                   | Heavy Equipment Present   |  |   |   | Х  |   |   | Х  |                 |  | х  |   |   |   |   |   |   |                       |          |                                 |  | Х  | х   | х       | х   | х   |   |  | Щ  |
|  |                                   | Shore Defense Works   | х  | Х   | х   | х  | х   | Х   | х  | х               | x :  | х х  |   | х   | х   | _   | _   | ( X   |                       | :        | х                               |  |  |   |         |   |   |   |  | Щ.   |
|  | Hydraulic modification            | Channelization or Diking  | Х  | Х   | х   | Х  | Х   | х   | Х  | + +             | _  | х х  | +   | Х   | Х   |   |   | +   |                       | +        | х                               |  |  |   | -       |   |   |   | <u>                                     </u>   | $\vdash$   |
|  | -                                 | Removal of Large Woody Debris   |  | х   |   | -  |   |   | х  | Х               | х  | х  | X   |   | Х   | _   | _   | ( X   | Х                     | _        | х                               |  |  |   | -       | -   |   | +   | $\perp$  | $\vdash$   |
|  |                                   | Temporary Water Diversion   | .,   | Х   |   |  | .,  | .,  | .,   | X               |  |  |   | .,  | .,  | ,   | _   | ( X   | $\vdash$              | _        | х                               | х  |  |   | -       |   |   | -   | $\perp \!\!\!\! \perp \!\!\!\! \perp$  | $\vdash$   |
|  | Vegetation Modification           | Long Term Removal of Vegetation   | X  | Х   | X   | Х  | X   | X   | X  | <u> </u>        |  | X X  | +   | X   | X   | -   | _   | ( X   | X                     | _        | $\vdash$                        | +  |  |   | -       |   |   | -   | $\perp \!\!\!\! \perp \!\!\!\! \perp$  | $\vdash$   |
|  | 1                                 | Permanent Removal of Vegetation   | X  | X   | X   | X  | X   | X   | X  | ^               |  | x x  | -   | X   | x   | -   | _   | ( X   | X                     |          | $\vdash$                        | +  |  |   | -       |   |   | +   | +  | $\vdash$   |
|  |                                   | Short Term Removal of Vegetation  | Х  | Х   | Х   | Х  | Х   | Х   | Х  | ^               | X .  | х х  | X   | Х   | *   | -   | _   | ( X   | X                     | ,        | $\vdash$                        | +  | х  | X   | x       | х   | х   |   | +  | +  |
|  | Paving/Concrete                   | Addition of Impervious Surface  |  |   |   |  |   |   |  | ++              |  | +  |   |   |   |   | -   | ( X   | x                     | `-       | $\vdash$                        |  | x  | x   | ^       | x   | ×   |   | +-   | $\vdash$   |
|  | Chemical                          | Maintenance of existing  Fuel & Industrial Fluids Present                                 |  |   |   |  |   |   |  | +               |  |  |   |   |   | ,   | x   | X   | $\vdash$              | х        | $\vdash$                        |  |  | ^   | +^      | <u> </u>  | -   | 1   | +  | -  |
|  | Criemical                         | High Pressure Washing/Flushing  |  |   | 1   |  |   |   |  | х               | +  | -  |   |   |   | _   | x   | X   | H                     | X        | $\vdash$                        | +  |  |   | -       |   |   | +   | +  | $\vdash$   |
|  |                                   | Painting  |  |   |   |  |   |   |  |                 |  | +  |   |   |   | _   | x   | х   | $\vdash$              | х        | $\vdash$                        |  |  |   |         |   |   | +   | +  | $\vdash$   |
|  |                                   | Uncured Concrete, Hot Asphalt or Hot Tar  |  |   |   |  |   |   |  |                 |  |  |   |   |   | ١,  | x   | x   |                       | x        |                                 |  |  |   |         |   |   |   | 1  | $\vdash$   |
|  |                                   | Used  |  |   |   |  |   |   |  |                 |  |  |   |   |   | ľ   | ^   | ^   |                       | ^        |                                 |  |  |   |         |   |   |   |  |  |
| Instream                                       | Earth Work                        | Drilling, Excavation, & Filling   | х  | х   |   |  |   |   | Х  | х               | х  | х  | x   |   | х   | ;   | х   | х   | х х                   |          | х                               | х  |  |   |         |   |   |   | х  | хх   |
|  |                                   | Heavy Equipment Present   |  |   |   |  |   |   | х  | $  \uparrow  $  | $\top$   | х  |   |   |   | $\neg$  |   |   |                       |          | $\sqcap$                        | $\top$   | х  | х   | х       | х   | х   |   |  | i  |
|  |                                   | Manual Labor Present  |  |   |   |  |   |   | Х  |                 |  | х  |   |   |   |   |   |   |                       |          |                                 |  | Х  | х   | х       | Х   | х   |   |  |  |
|  |                                   | Shore Defense Works   |  | х   |   |  |   |   | Х  | Х               | х  | х  | x   |   | х   |   | х   | х   | х                     |          | х                               | х  |  |   |         |   |   |   |  |  |
|  | Hydraulic modification            | Channelization or Diking  | Х  | х   |   |  |   |   | Х  | х               | х  | х  | x   |   | Х   | ,   | х   | х   | х                     |          | х                               | х  |  |   |         |   |   |   |  |  |
|  |                                   | Culvert Cleaning  |  | х   |   |  |   |   |  | х               |  |  |   |   |   | 7   | х   | х   | х                     |          | х                               | х  |  |   |         |   |   |   | $oxedsymbol{oxedsymbol{eta}}$  |  |
|  |                                   | Culvert Extension, Reduction, Replacement   |  | х   |   |  |   |   | х  | х               | х  | х  | x   |   | х   | 2   | х   | х   | х                     |          | х                               | х  |  |   |         |   |   |   | $igsqcup^{-1}$   | ota  |
|  |                                   | Removal of Large Woody Debris   |  | х   |   |  |   |   |  | х               | х  |  | x   |   | х   | _   | х   | _   | $\Box$                | _        | $\Box$                          |  |  |   | $\perp$ |   |   |   | <u> </u>   | $\perp \!\!\! \perp$   |
|  | 1                                 | Temporary Water Diversion   |  | Х   |   |  |   |   |  | х               | $\perp$  | х  |   |   | Х   | ,   | х   | -   | $\Box$                | 1        | $\sqcup \downarrow$             | $\perp$  |  |   | 1       |   |   | 1   | <u>                                     </u>   | $\vdash$   |
|  | Structure Work                    | Bridge Debris Removal   |  |   |   |  |   |   |  | х               | _  | х  | X   |   | Х   |   | _   | -   |                       | -        | $\sqcup$                        |  |  |   | -       |   |   |   | Х  | хх   |
|  |                                   | Falsework, Cofferdam, or Other Temporary<br>Structure Placement                           |  |   |   |  |   |   | Х  | х               | $\perp$  | х  |   |   | х   | _   | х   | х   | х                     |          | х                               |  |  |   |         |   |   |   |  | $\perp$  |
|  | 1                                 | Pier, Footing, abutment scour   | Х  |   |   |  |   |   | Х  | Х               | $\perp$  | х  | x   |   | х   | _   | х   | 4_  | $\sqcup \!\!\! \perp$ | 4_       | $\sqcup$                        | $\perp$  |  |   | $\bot$  |   |   | 1   | <b>↓</b> '   | $\vdash$   |
|  | Chemical                          | Fuel & Industrial Fluids Present  |  |   |   |  |   |   |  | $\sqcup$        | $\perp$  | $\perp$  |   |   |   |   | х   | х   | $\sqcup$              | х        | $\sqcup$                        | $\perp$  |  |   | $\bot$  |   |   | 1   | <b> </b>   | $\vdash$   |
|  | <u> </u>                          | High Pressure Washing/Flushing  |  | 1   |   |  |   |   |  | $\sqcup$        | $\perp$  | $\perp$  | -   |   | Ц   |   | х   | х   | $\sqcup \!\!\! \perp$ | х        | $\sqcup \downarrow$             | $\perp$  |  |   | 1       |   |   | 1   | х  | хх   |
|  |                                   | Uncured Concrete Used   |  | 1   |   |  |   |   |  | $\sqcup$        | $\perp$  |  |   |   | $\square$   | _   | х   | х   | $\sqcup \!\!\! \perp$ | х        | $\sqcup$                        | $\perp$  |  |   | +       |   |   | 1   | <b>↓</b> '   | $\vdash$   |
|  |                                   | Treated woods (in stream only)  |  |   |   |  |   |   |  | 1               |  |  | 1   |   |   | 1   | х   | х   |                       | х        |                                 |  |  |   |         |   | 1   | 1   | 1 '  | ,  |

### Best Management Practices to Avoid and Minimize Impact (Continued)

| Maintenance Activity                           |                                   |   | Spill<br>Prevention &<br>Control  |   | Material/I   | Debris Dis   | posal  |   |   |  | Permits  |   | Fish   | Exclusion   |                                     | Timing   | ı   | Habita | t Measure  | Shoulde<br>Work  | r Pain  | ting/<br>king              | Pre-Ac  | ctivity  | Grave<br>Should        | el<br>lers   |  | Oį   | peratio  | nal                                 |  |
|--|-----------------------------------|---|---|---|--|--|--|---|---|--|--|---|--|---|-------------------------------------|--|---|--------|--|--|---|----------------------------|---|--|------------------------|--|--|--|--|-------------------------------------|--|
|  |                                   |   | Control   |   |  |  |  |   |   |  |  | ω <sub>σ</sub>  |  |   |                                     |  | Т   |        | Т  |  | +.  | Ť                          |   |  |                        |  | T_   |  | ı  | П                                   | $\top$   |
| Proximity                                      | Classification                    | Components  | Carry spill kit used for small spills related to equipment failure. Desired outcome is to control, absorb, or contain spill for clean up and disposal. Minimum requirements: Absorbent, Pads, & Shovel. | Cleaning waste materials and demolition debris occurring on-site shall be handled and disposed of in a manner that does not cause contamination of water. | After repairs are completed, remove construction/maintenance waste materials from site for disposal or recycling.  If area is swept with a pick-up sweeper, the material will be hauled out of the | area to appropriate disposal site.  Removed construction/maintenance waste materials from work site will be taken to a disposal of and/or recyding area. | we and dispose of collected materials and liquids offsite. | Solid materials removed from the site will be taken to a disposal or recyding area. | Tentove filaterials from foadway in assigned are; thin waters of the State will be reviewed with the V NMFS/USFWS, and permitted prior to work. | All stream crossing repair, replacement or maintenance work within the waters of the State will be reviewed with the WSDFW, HPA as negotiated with NMFS/USFWS and chemitled ninch to work. | Bridge maintenance activities requiring an HPA will be reviewed with the WSDFW, and permitted prior to construction, in accordance with the HPA's as negotiated with MRFS and USFWS. | Maintenance activities within waters of the State will be covered under "Watercourses and Streams". | Periodically remove sediment deposits and vegetation during the dry season with a motor grader.  Fish Exclusion Protocol and permit conditions will be followed during maintenance activities. | Fish will be excluded from construction area using appropriate methods such as the use of nets, dewatering at a controlled rate, and removal of stranded fish according to HPA permit conditions as negotiated with NMFS/USFWS. | tule work in dry conditions or when | If seasonal watercourse or stream, schedule work during dry conditions.  Plan and schedule work in dry or low flow conditions, except in emergency | situations (HTA).<br>If bridge maintenance is to be performed near a seasonal watercourse or stream, schedule the work during dry conditions. |        | Place appropriate streambed material (HPA). Habilat restoration to be designed and constructed in accordance with applicable | noon, stax and room a garden so.  Maximze opportunities for shoulder work, which will increase inflitration or biofitration. | Follow state and federal guidelines for handling paint and other traffic marking materials. | e roadways in dry weather. | Use BMPs that include, but are not limited to:<br>Blocking facility outlet - Using less water.<br>- Blocking down gradient end of pipe. | Use cleanup procedures that protect water quality, for example, stormwater decant, equipment washing, and waste material storage and disposal. | store gravel shoulder. | RoII shoulder material to ensure proper grade and retention of sediment control qualities. | Minimize use of salt by reducing salt-to-sand ratios.  Treat sand dearup as part of the emergency: remove sand as a priority in order to | diments.<br>Sean up efforts to aquatic habitat areas in order to minimize impacts. | ioritize dean up areas <u>withou</u> t sediments collect | snow in areas that allow vegetation | Develop protocols for dechlorination of water. |
| Distant from Stream                            |                                   |   | х   |   |  |  |  |   |   |  |  |   | х  |   |                                     |  |   |        | +  |  |   | +                          |   |  | +                      |  | +  | +  |  | +                                   | 十  |
| (>300 ft. away)                                | Vegetation Modification           | Long Term Removal of Vegetation   |   |   |  | +  |  |   |   |  |  | +   | ^  |   |                                     |  | +   |        | +  |  | +   |                            |   |  | +                      |  | -  | +  |  | +                                   | +  |
|  |                                   | Permanent Removal of Vegetation   |   | .,  |  | +  | -  |   |   |  |  |   |  |   |                                     |  | +   |        |  |  | -   | +                          |   |  | +                      |  | _  | _  | -  | +                                   | +  |
|  | Paving/Concrete                   | Addition of Impervious Surface  | X   | Х   | х  |  |  |   |   |  |  |   |  |   |                                     |  | +   |        | -  |  |   |                            |   |  | +                      |  |  | -  | -  | +                                   | +  |
|  | Chemical                          | Fuel & Industrial Fluids Present  | X<br>X  |   |  | +  |  |   |   |  |  | +   |  |   |                                     |  | +   |        | +  |  | Х   | х                          |   |  | +                      |  | -  | +  |  | +                                   | +  |
|  |                                   | Painting  | *   |   |  | +  |  |   |   |  |  | +   |  |   |                                     |  | +   |        | +  |  | *   | ^                          |   |  | +                      |  | -  | +  |  | +                                   | +  |
|  |                                   | Uncured Concrete, Hot Asphalt or Hot Tar<br>Used  | х   |   |  |  |  | $\perp$   |   |  |  |   |  |   |                                     |  |   |        | $\perp$  |  |   |                            |   |  | Ш                      |  |  | $\perp$  |  | Ш                                   | _  |
| Adjacent to or Above<br>Stream (within 300 ft) | Earth/Surface or cleaning<br>Work | Clearing, Drilling, Excavation, Filling, Grading, Grubbing, Cleaning, grinding or cutting |   | х   | x x  |  | х  | x >   | x x   |  | х  |   | х  |   | х                                   | х  | х   |        | х  | х  |   |                            | х   |  | x                      | х  | x >  | х х  | x  | х                                   | x x  |
|  |                                   | Heavy Equipment Present   | х   |   | х  |  |  | х   | Х   |  |  |   |  |   | Х                                   |  |   |        |  |  |   |                            |   | Х  |                        |  |  |  |  | $\perp \perp$                       | $\perp$  |
|  |                                   | Shore Defense Works   |   |   |  |  |  |   | х   |  |  |   |  |   | х                                   | хх   |   | х      | x x  |  |   |                            |   |  |                        |  |  |  |  | $\perp \perp$                       | $\bot$   |
|  | Hydraulic modification            | Channelization or Diking  |   |   |  |  |  |   |   |  |  | Х   |  |   |                                     |  |   |        | х  |  |   |                            |   |  | $\perp$                |  |  |  | _  | $\bot$                              | 4  |
|  |                                   | Removal of Large Woody Debris   |   |   | х  | Х  |  |   |   |  |  | Х   |  |   |                                     | х х  |   | Х      | Х  |  |   |                            |   |  | $\perp$                |  |  |  |  | $\bot$                              | $\perp$  |
|  |                                   | Temporary Water Diversion   |   |   |  |  |  |   |   |  |  | Х   |  |   |                                     |  |   |        |  |  |   |                            |   |  |                        |  |  |  |  | $\perp \perp \downarrow$            | 4  |
|  | Vegetation Modification           | Long Term Removal of Vegetation   |   |   |  | $\perp$  | -+   | х   |   |  |  |   |  |   |                                     |  |   |        | х  |  |   |                            |   |  | $\perp$                |  |  |  | _  | +                                   | 4  |
|  |                                   | Permanent Removal of Vegetation   |   |   |  | $\perp$  |  | Х   |   |  |  |   |  |   |                                     |  |   |        | Х  |  | -   | +                          |   |  | +                      |  |  |  | _  | +                                   | +  |
|  |                                   | Short Term Removal of Vegetation  |   |   |  | $\perp$  |  | х   |   |  |  |   | Х  |   |                                     |  |   |        | х  |  |   |                            |   |  | $\perp$                |  |  |  | _  | +                                   | +  |
|  | Paving/Concrete                   | Addition of Impervious Surface  | Х   | Х   | х  | $\perp$  |  |   |   |  |  |   |  |   |                                     |  |   |        |  |  | -   | +                          |   |  | +                      |  |  |  | _  | +                                   | +  |
|  |                                   | Maintenance of existing   | Х   | Х   | х  | $\perp$  |  |   |   |  |  |   | х  |   |                                     |  |   |        | _  |  |   |                            |   |  | $\perp$                |  | x >  | x x  | . x  | Х                                   | 4  |
|  | Chemical                          | Fuel & Industrial Fluids Present  | Х   |   |  | $\perp$  |  |   |   |  |  |   |  |   |                                     |  |   |        |  |  | -   | +                          |   |  | +                      |  |  |  | _  | +                                   | +  |
|  |                                   | High Pressure Washing/Flushing  | Х   |   |  | $\perp$  | х  |   |   |  |  | Х   |  |   |                                     |  |   |        | _  |  |   |                            |   |  | $\perp$                |  |  |  | _  | +                                   | X )  |
|  |                                   | Painting  | х   |   |  | $\perp$  |  |   |   |  |  | х   |  |   |                                     |  |   |        |  |  | х   | х                          |   |  | +                      |  |  |  | _  | +                                   | +  |
|  |                                   | Uncured Concrete, Hot Asphalt or Hot Tar<br>Used  | х   |   |  |  |  |   |   |  |  |   |  |   |                                     |  |   |        |  |  |   | Ш                          |   |  |                        |  |  |  |  |                                     | 4  |
| Instream                                       | Earth Work                        | Drilling, Excavation, & Filling   |   | х   | х х  | + - 1  |  | )   | x x   | х  | х  | х   | х  | х   | х                                   | х х  | х   | х      | х х  |  |   | П                          |   |  | П                      |  |  |  |  | $\Box$                              | Ŧ  |
|  |                                   | Heavy Equipment Present   | Х   |   | х  | +  | $\vdash$   |   |   | -  |  | Х   |  |   |                                     | $\vdash$   | +   | 1      | $\perp$  |  |   | $\vdash \vdash$            |   |  | +                      |  | +  | +  | $\perp$  | +                                   | +  |
|  |                                   | Manual Labor Present  | Х   |   | 1  |  | $\vdash \vdash$  | -   |   | 1  |  | Х   |  |   |                                     |  | +   | 1      |  |  |   | $\sqcup$                   |   |  | +                      |  | +  | +  | +  | +                                   | +  |
|  |                                   | Shore Defense Works   | 1   | X   | х  | +  |  | $\perp$   | Х   | Х  |  | Х   | х  | Х   | Х                                   | X X  |   |        | x x  | -  | -   | $\sqcup$                   |   |  | +                      |  | $\perp$  | $\perp$  | $\perp$  | $\dashv$                            | +  |
|  | Hydraulic modification            | Channelization or Diking  |   | Х   | х  | +  | $\perp$  | _   | Х   | Х  |  | Х   | х  | Х   | Х                                   | X X  |   | +      | х х  |  |   | $\sqcup$                   |   |  | +                      |  | +  | +  | $\bot$   | $\coprod$                           | +  |
|  |                                   | Culvert Cleaning  | ļ   | Х   | х  | +  | $\vdash$   |   | х   | Х  |  | х   | х  | Х   | х                                   | х х  | _   | х      | _  |  |   | $\vdash \vdash$            |   |  | +                      |  | +  | +  | $\perp$  | +                                   | +  |
|  |                                   | Culvert Extension, Reduction, Replacement   |   | X   | X  | х  | $\vdash$   | $\perp$   | X   | X  |  | Х   | X  | X   | X                                   | X X  | _   | + +    | x x  | _  | -   | ++                         |   |  | +                      |  | +  | +  | -  | +                                   | +  |
|  |                                   | Removal of Large Woody Debris   | ļ   | X   | X  | +  | $\vdash$   |   | X   | х  |  | Х   | X  | X   | X                                   | X X  | _   |        | x x  |  |   | $\vdash \vdash$            |   |  | +                      |  | +  | $\perp$  | -  | $\dashv$                            | +  |
|  | Characters 144 at                 | Temporary Water Diversion   |   | X   | X  |  |  |   | X   | · ·  | ,,   | X   | X  | X   | X                                   | X X  |   |        | X  |  | -   | ++                         |   |  | +                      |  | $\perp$  | +  | +  | +                                   | +  |
|  | Structure Work                    | Bridge Debris Removal  Falsework, Cofferdam, or Other Temporary                           |   | x   | X  | х  | $\Box$   | ,   | +   | X  | x  | x   | x  | x   | X                                   | x x  |   | 1 1    | x x  | +  | 1   | $\forall$                  |   |  | +                      |  |  | +  | +  | +                                   | +  |
|  |                                   | Structure Placement   |   | *   | x  |  | $\vdash$   | $\perp$   | x   | X  | X  | x   | x  |   | X                                   | x x  |   | 1      | x x  |  |   | $\vdash$                   |   |  | +                      |  |  | +  | +  | +                                   | +  |
|  | Chamias                           | Pier, Footing, abutment scour   | x   |   | ^  | +  | $\vdash$   | +   | ×   | ×  | , x  | X   | ×  | Х   | *                                   | ^   ×  | ×   | *      | ^ X  |  | -   | ++                         |   |  | +                      |  | -  | +  | +  | ++                                  | +  |
|  | Chemical                          | Fuel & Industrial Fluids Present  High Pressure Washing/Flushing                          |   |   | <del>                                     </del>   | +  | х  |   | ,   | -  | -  | -   |  |   |                                     | $\vdash$   | +   | + -    | +  |  | -   | +                          |   |  | +                      |  |  | +  | +  | ++                                  | x 2  |
|  |                                   | High Pressure Washing/Flushing  | X   |   |  | +  | ^  | )   | <u> </u>  | -  |  | Х   |  |   | -                                   | $\vdash$   | +   | +      | +  | -  | -   | $\dashv$                   |   |  | +                      |  | +  | +  | -  | ++                                  | 4  |
|  |                                   | Uncured Concrete Used   | X   |   | 1  | +  | $\vdash$   | +   |   | -  | -  |   |  |   |                                     | $\vdash$   | +   | 1      | +  |  | -   | $\dashv$                   |   |  | +                      |  | +  | +  | +  | ++                                  | +  |
|  | I                                 | Treated woods (in stream only)  | Х   | İ   | 1 1  |  | 1 <b>1</b>   |   | 1   | 1  | 1  | 1   | I  | I   | 1                                   | 1 1  | 1   | 1 1    | - 1  | 1  | 1   | 1 1                        |   | 1 1  | 1 1                    |  | - 1  | - 1  | - 1  | 1 1                                 | - 1  |

# Mechanism of Effects and Potential Outcomes

| Maintenance Activity                        |                                   |   | Mechanisms for Effects/Impacts  | Effects with Program   |
|---|-----------------------------------|---|---|--|
| Proximity                                   | Classification                    | Components  |   | Potential Outcomes   |
| Distant from Stream (>300 ft away)          | Earth/ Surface Work               | Clearing, Drilling, Excavation,<br>Filling, Grading, Grubbing,<br>Cleaning, grinding or cutting | Mobilize sediments, increase erosion rates  | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. • Maintain or restore structure. • Restore or Maintain surface water drainage. • Reduce or trap sediments in gravel shoulder. • Allow infiltration of water in gravel. • Clean roadway surface and remove soil, organics, solid waste and debris from entering Watercourse, streams and/or water bodies. • Reduce sediment loading of shoulders, ditches, detention ponds and watercourses and/or streams. • Reduce the occurrence of vehicles leaving the road surface and entering sensitive areas. • Leave vegetated sections in ditch where sediment buildup has not impeded flow or infiltration.  |
|   | Hydraulic Modification            | Channelization or Diking  | Mobilize sediments, harden banks, prevent re-vegetation, alter hydraulics and flow regime   | Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality.   |
|   |                                   | Culvert Cleaning  | Mobilize sediments  | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. • Reduce sediment conveyance and loading to watercourses and/or streams by trapping and removal of sediment and/or debris from the system. • Restore or maintain surface water drainage. • Reduce over flows/flooding from plugged system. • Maintain and restore water quality by cleaning ditches or structures. • Maintain or restore sediment storage capacity. • Keep structure clear of debris, trash, and yard waste.  |
|   |                                   | Culvert Extension, Reduction  | Mobilize sediments  | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. • Maintain or restore structure. • Restore or maintain surface water drainage by performing repairs. • Reduce turbidity. • Maintain or restore sediment storage capacity. • Keep structure clear of debris, trash, and yard waste.  |
|   |                                   | Culvert Replacement   | Mobilize sediments  | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. Maintain or restore structure. • Restore or maintain surface water drainage by performing repairs. • Reduce potential plugging of systems. • Reduce over flows/flooding from plugged system. • Maintain or restore sediment storage capacity. • Keep structure clear of debris, trash, and/or yard waste. • Reduce flooding and erosion from blockages of system by removing obstructions such as debris, trash, yard waste, and/or sediment.   |
|   |                                   | Enclosed Drainage System<br>Cleaning  | Mobilize sediments  | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. • Control storage, delivery, and routing of surface and groundwater, to Control volumes and velocities of stormwater discharge by removing sediments. • Reduce sediment transport from system breaks by cleaning. • Maintain or restore structure. • Reduce turbidity. • Reduce potential plugging of systems. • Reduce over flows/ flooding from plugged system. • Maintain or restore sediment storage capacity. • Maintain and restore water quality by cleaning ditches or structures. • Reduce flooding and erosion from blockages of system by removing obstructions such as debris, trash, yard waste, and/or sediment.  |
|   |                                   | Deposition of Large Woody Debris  | Not Applicable  | Not Applicable   |
|   |                                   | Removal of Large Woody Debris   | Not Applicable  | Not Applicable   |
|   |                                   | Temporary Water Diversion   | Mobilize sediments, temporary fish passage impediment   | Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality.   |
|   | Vegetation Modification           | Long Term Removal of Vegetation   | Increase erosion rates & sedimentation  | Protect Watercourse, stream and/or waterbody. * Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. * Provide a safe roadway surface for traveling public. * Reduce the occurrence of vehicles leaving the road surface and entering sensitive areas.   |
|   |                                   | Permanent Removal of Vegetation   | Increase erosion rates & sedimentation, elimination of normal forest succession processes   | Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. • Provide a safe roadway surface for traveling public. • Reduce the occurrence of vehicles leaving the road surface and entering sensitive areas.   |
|   |                                   | Planting Vegetation   | Buffer riparian zone, decrease erosion rates  | Protect Watercourse, stream and/or waterbody. • Maximize opportunities for increased infiltration. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. • Reduce turbidity. • Allow infiltration of water.   |
|   |                                   | Short Term Removal of Vegetation  | Increase erosion rates & sedimentation  | Protect Watercourse, stream and/or waterbody. • Maximize opportunities for increased infiltration. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. • Reduce turbidity. • Allow infiltration of water.   |
|   | Paving                            | Addition of Impervious Surface  | Increase erosion rates & sedimentation, prevent revegetation  | Protect Watercourse, stream and/or waterbody. *Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality.  |
|   |                                   | Maintenance of existing   |   | Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. • Provide a safe roadway surface for traveling public. • Minimize pollutants resulting from vehicle accidents such as petroleum hydrocarbons, heavy metals, and road washoff from entering storm drainage /stream system. • Reduce the occurrence of vehicles leaving the road surface and entering sensitive areas. • Control sediment and debris from ROW.  |
|   | Chemical                          | Fuel & Industrial Fluids Present  | Release pollutants  | Protect Watercourse, stream and/or waterbody. Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality.   |
|   |                                   | Painting  | Release pollutants  | Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality.   |
|   |                                   | Uncured Concrete, Hot Asphalt or Hot Tar Used   | Release pollutants  | Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality.   |
| Adjacent to or Above Stream (within 300 ft) | Earth/Surface or cleaning<br>Work | Clearing, Drilling, Excavation, Filling, Grading & Grubbing                                     | Mobilize sediments, increase erosion rates  | Protect Watercourse, stream and/or waterbody. * Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintennance Activity to contribute to the restoration of water quality. * Maintain and restore structure. * Reduce sediment conveyance and loading to watercourses and/or streams by trapping and removal of sediment and /or debris. * Reduce or trap sediments in gravel. * Allow infiltration of water through gravel. * In areas where open ditch sections abut the roadway, provide a filter strip for runoff before water enters the ditch using gravel and vegetation on the roadway shoulder, if area is wide enough. * Clean roadway surface and remove soil, organics, solid waste and debris from entering watercourses, streams and/or water bodies. * Restore or maintain surface water drainage by cleaning curbs and drain inlets. * Reduce sediment loading of shoulders, ditches, detention ponds and watercourses and/or streams. * Provide a safe roadway surface for traveling public. * Reduce the occurrence of vehicles leaving the road surface and entering sensitive areas. Control sediment and debris from ROW.  |
|   |                                   | Heavy Equipment Present   | Soil compaction, mobilize sediments, increase erosion rates   | Protect Watercourse, stream and/or waterbody.     Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. Minimize work site pollutants from maintenance / repair activities.   |
|   |                                   | Shore Defense Works   | Mobilize sediments, increase erosion rates, reduce gravel recruitment   | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. • Improve or maintain riparian habitat. • Reduce streambed/streambank erosion by re-vegetation or stabilization of disturbed soils. • Remove soil, organics, solid waste, and debris from entering watercourses, streams and/or water bodies. • Reduce sediment loading of shoulders, ditches, detention ponds and watercourses and/or streams. • Provide a reasonable safe roadway surface for traveling public. • Minimize pollutants resulting from vehicle accidents such as petroleum hydrocarbons, heavy metals, and road washoff from entering stream system. • Reduce the occurrence of vehicles leaving the road surface and entering sensitive areas. • Control sediment and debris from ROW. • Stabilize slide/washout area within the ROW to reduce environmental, transpiration and/or structural impacts.   |
|   | Hydraulic Modification            | Channelization or Diking  | Mobilize sediments, harden banks, decrease sinuosity, prevent re-vegetation, remove existing in-stream complexity, alter hydraulics and flow regime, elimination of channel migration, and reduce instream habitat complexity | Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. Reduce streambed/streambank erosion by revegetation or stabilization of disturbed soils. • Reduce flooding and erosion from blockages of system by removing obstructions such as debris, trash, yard waste, sediment.   |
|   |                                   | Culvert Cleaning  | Mobilize sediments  | Protect Watercourse, stream and/or waterbody. Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. Maintain or restore structure. Minimize work site pollutants from maintenance/repair activities. Restore or maintain surface water drainage by performing repairs. Restore or maintain road surface/safety. Reduce turbidity. Reduce turbidity. Reduce sediment conveyance and loading to watercourses and/or streams by trapping and removal of sediment and/or debris from the system. Clean up and remove sediment from drainage system. Reduce potential plugging of systems. Reduce over flows/flooding from plugged system. Maintain and restore water quality by cleaning ditches or structures. Repet structure clear of debris, trash, and yard waste. Maintain and restore water quality by cleaning ditches or structures. Repet structures and/or stormwater facilities which are watercourses or streams. Improve or maintain fish passage. Improve or maintain streambed habitat within pipe, culvert or area within work zone. Reduce flooding and erosion from blockages of system by removing obstructions such as debris, trash, yard waste, sediment. Remove soil, organics, solid waste and debris from'entering watercourses, stream and/or water bodies. Reduce sediment loading of shoulders, ditches, detention ponds and watercourses and/or streams. Control sediment and debris from ROW.  |
|   |                                   | Culvert Extension, Reduction  | Mobilize sediments  | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. • Maintain or restore structure. • Minimize work site pollutants from maintenance/repair activities. Restore or maintain road surface/safety. • Improve or maintain streambed habitat within pipe, culvert or area within work zone. • Reduce streambed/streambank erosion by revegetation or stabilization of disturbed soils. • Reduce the occurrence of vehicles leaving the road surface and entering sensitive areas. • Repair roadways, surface drainage, stormwater system, and/or other ROW structures.   |
|   |                                   | Culvert Replacement   | Mobilize sediments  | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. • Maintain or restore structure. • Minimize work site pollutants from maintenance/repair activities. • Restore or maintain road surface/safety. • Improve or maintain streambed habitat within pipe, culvert or area within work zone. • Reduce streambed/streambank erosion by revegetation or stabilization of disturbed soils. • Improve or maintain riparian habitat.   |
|   |                                   | Enclosed Drainage System<br>Cleaning  | Mobilize sediments  | • Protect Watercourse, stream and/or waterbody. • Reduce worksite pollutants to maintain or restore water quality. • Control storage, delivery, and routing of surface and groundwater, to control volumes and velocities of stormwater discharge by removing sediments. • Reduce sediment transport from system breaks by cleaning. • Maintain or restore structure. • Minimize work site pollutants from maintenance/repair activities. • Restore or maintain surface water drainage by performing repairs. • Reduce turbidity. • Reduce sediment conveyance and loadin to watercourses and/or streams by trapping and removal of sediment and/or debris from the system. • Clean up and remove sediment from drainage system. • Reduce opential plugging systems. • Reduce over flows/flooding from plugged system. • Maintain and restore water quality by cleaning ditches or structures. • Maintain or restore sediment storage capacity. • Kees structure clear of debris, trash, and yard waste. • Maintain and restore water quality by cleaning ditches and/or stormwater facilities which are watercourses or streams. • Improve or maintain streams of shoulders, ditches, detention ponds, watercourses and/or streams. • Control sediment and debris from entering watercourses, streams and/or water bodies. • Reduce sediment loading of shoulders, ditches, detention ponds, watercourses and/or streams. • Control sediment and debris from ROW. • Improve or maintain fish passage. • Improve or maintain streambed habitat within pipe, culvert or area within work zone.  |
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12/17/01 EffectsTable12-11-01 revise.xls

| Maintenance Activity |                         |   | Mechanisms for Effects/Impacts  | Effects with Program  Petertial Outcomes   |
|----------------------|-------------------------|---|---|--|
| Proximity            | Classification          | Components  |   | Potential Outcomes   |
|                      |                         | Deposition of Large Woody Debris  | Mobilize sediments  | Protect Watercourse, stream and/or waterbody. Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. Improve or maintain streambed habitat within pipe, culvert or area within work zone.  Protect Watercourse, stream and/or waterbody. Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of waterbody.  |
|                      |                         | Removal of Large Woody Debris   | Mobilize sediments, remove existing in-stream complexity.   | • Protect vialercourse, shearn and/or waterbody. • Reduce furior (or dirt, debris, sediment, and petroleum products) from maintenance Activity to contribute to the restoration or waterbody.  quality.  |
|                      |                         | Temporary Water Diversion   | Mobilize sediments, temporary fish passage impediment   | <ul> <li>Protect Watercourse, stream and/or waterbody.</li> <li>Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of wat quality.</li> <li>Minimize work site pollutants from maintenance/repair activities.</li> </ul>   |
|                      | Vegetation Modification | Long Term Removal of Vegetation   | Loss of shade, increase erosion rates & sedimentation, destabilization of streambank, reduced LWD recruitment   | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality.   |
|                      |                         | Permanent Removal of Vegetation   | Loss of shade, increase erosion rates & sedimentation, destabilization of streambank reduced LWD recruitment  | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality.   |
|                      |                         | Planting Vegetation   | Mobilize sediments, buffer riparian zone, decrease erosion rates  | • Protect Watercourse, stream and/or waterbody. • Maximize opportunities for increased infiltration. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintena Activity to contribute to the restoration of water quality. • Improve in-stream bio-filtration. • Improve or maintain riparian habitat. • Reduce streambed/streambank erosion by revegeta or stabilization of disturbed soils.  |
|                      |                         | Short Term Removal of Vegetation  | Loss of shade, increase erosion rates & sedimentation   | • Protect Watercourse, stream and/or waterbody. • Maximize opportunities for increased infiltration. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Mainten Activity to contribute to the restoration of water quality. • Improve in-stream bio-filtration. • Improve or maintain riparian habitat. • Reduce streambed/streambank erosion by revegeta or stabilization of disturbed soils.   |
|                      | Paving                  | Addition of Impervious Surface  | Increase erosion rates & sedimentation, prevent revegetation  | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of wat quality. • Minimize work site pollutants from maintenance/repair activities. • Restore or maintain road surface/safety. • Provide a reasonable safe roadway surface for traveling public Minimize pollutants resulting from vehicle accidents such as petroleum hydrocarbons, heavy metals, and road washoff from entering storm drainage/stream system. • Reduce the occurrence of vehicles leaving the road surface and entering sensitive areas. • Repair roadways, surface drainage, storm water system, and/or other ROW structures.  |
|                      |                         | Maintenance of existing   |   | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of war quality. • Provide a reasonable safe roadway surface for traveling public. • Minimize pollutants resulting from vehicle accidents such as petroleum hydrocarbons, heavy metals, and washoff from entering storm drainage /stream system. • Reduce the occurrence of vehicles leaving the road surface and entering sensitive areas. • Control sediment and debris from ROW.  |
|                      | Chemical                | Fuel & Industrial Fluids Present  | Release pollutants  | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of wat quality.   |
|                      |                         | High Pressure Washing/Flushing  | Release pollutants  | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of wat quality.   |
|                      |                         | Painting  | Release pollutants  | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of wat quality.   |
|                      |                         | Uncured Concrete, Hot Asphalt or Hot Tar Used                                       | Release pollutants  | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of wa quality.  |
| Instream             | Earth Work              | Drilling, Excavation, & Filling   | Mobilize sediments, alter stream hydraulics   | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. • Maintain and restore structure. • Reduce sediment conveyance and loading to watercourses and/or streams by trapping and removal of sediment and /or debris. • Reduce trap sediments in gravel. • Allow infiltration of water through gravel. • In areas where open ditch sections abut the roadway sportage and the roadway shoulder, if area is wide enough. • Clean roadway surface and remove soil, organics, solid waste and debris from entering watercourses streams and/or water bodies. • Restore or maintain surface water drainage by cleaning curbs and drain inlets. • Reduce sediment loading of shoulders, ditches, detention ponds an watercourses and/or streams. • Provide a reasonable safe roadway surface for traveling public. • Reduce the occurrence of vehicles leaving the road surface and entering sensitive areas. • Control sediment and debris from ROW.  |
|                      |                         | Heavy Equipment Present   | Soil compaction, mobilize sediments, alter stream hydraulics  | Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of wat quality.   |
|                      |                         | Manual Labor Present  | Mobilize sediments, alter stream hydraulics   | Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of wat quality.   |
|                      |                         | Shore Defense Works   | Mobilize sediments, alter stream hydraulics   | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of wat quality. Improve or maintain riparian habitat. Reduce streamben/streambank erosion by re-vegetation or stabilization of disturbed soils. Remove soil, organics, solid waste, and de from entering watercourses, streams and/or water bodies. Reduce sediment loading of shoulders, ditches, detention ponds and watercourses and/or streams. Provide a reasonable roadway surface for traveling public. Minimize pollutants resulting from vehicle accidents such as petroleum hydrocarbons, heavy metals, and road washoff from entering storm drainage/stream system. Reduce the occurrence of vehicles leaving the road surface and entering sensitive areas. Control sediment and debris from ROW. Stabilize slide/washou within the ROW to reduce environmental, transpiration and/or structural impacts.   |
|                      | Hydraulic modification  | Channelization or Diking  | Mobilize sediments, harden banks, decrease sinuosity, prevent re-vegetation, remove existing in-stream complexity, alter hydraulics and flow regime, elimination of channel migration, and reduce instream habitat complexity | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of wa quality. • Maintain and restore structure. • Reduce streambed/ streambank erosion by revegetation or stabilization of disturbed soils. • Reduce flooding and erosion from blockages system by removing obstructions such as debris, trash, yard waste and sediment.   |
|                      |                         | Culvert Cleaning  | Mobilize sediments  | Protect Watercourse, stream and/or waterbody. *Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of wa quality. *Maintain or restore structure. *Minimize work site pollutants from maintenance/repair activities. *Restore or maintain surface water drainage by performing repairs. *Rest maintain road surface/safety. *Reduce turbidity. *Reduce sediment conveyance and loading to waterourses and/or streams by trapping and removal of sediment and/or debris fros system. *Clean up and remove sediment from drainage system. *Reduce potential plugging of systems. *Reduce over flows/flooding from plugged system. *Maintain and restore quality by cleaning ditches or structures. *Keep structure clear of debris, trash, and yard waste. *Maintain and restore water quality by cleaning ditches and/or stormwater facilities are watercourses or streams. *Improve or maintain fish passage. *Improve or maintain streambed habitat within pipe, culvert or area within work zone. *Reduce flooding and eros from blockages of system by removing obstructions such as debris, trash, yard waste, sediment. *Remove soil, organics, solid waste and debris from entering watercourses, stream and/or water bodies. *Reduce sediment loading of shoulders, ditches, detention ponds and watercourses and/or streams. Control sediment and del from ROW. |
|                      |                         | Culvert Extension and Reduction   | Mobilize sediments, alter stream hydraulics   | Protect Watercourse, stream and/or waterbody. Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of wa quality. Maintain or restore structure. Minimize work site pollutants from maintenance/repair activities. Restore or maintain road surface/safety. Improve or maintain fish passag Improve or maintain riparian habitat. Improve or maintain streambed habitat within pipe, culvert or area within work zone. Reduce streambed/streambank erosion by revegetation stabilization of disturbed soils. Reduce the occurrence of vehicles leaving the road surface and entering sensitive areas. Repair roadways, surface drainage, storm water system, other ROW structures.   |
|                      |                         | Culvert Replacement   | Mobilize sediments, alter stream hydraulics   | Protect Watercourse, stream and/or waterbody. Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of wa quality. Improve or maintain fish passage. Improve or maintain riparian habitat. Improve or maintain streambed habitat within pipe, culvert or area within work zone.   |
|                      |                         | Enclosed Drainage System Cleaning   | Not Applicable  | Not Applicable   |
|                      |                         | Deposition of Large Woody Debris  | Mobilize sediments, alter hydraulics, increase habitat complexity   | Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of wa quality. • Improve or maintain streambed habitat within pipe, culvert or area within work zone.   |
|                      |                         | Removal of Large Woody Debris   | Mobilize sediments, alter hydraulics, decrease habitat complexity   | Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of waquality.   |
|                      |                         | Temporary Water Diversion   | Instream habitat displacement, alter stream hydraulics, barrier to passage  | Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of war quality. • Minimize work site pollutants from maintenance/repair activities.   |
|                      | Structure Work          | Barge Present   | Mobilize sediments, alter stream hydraulics   | Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of waterbody.   |
|                      | 1                       | -   | ,   | quality.   |
|                      |                         | Bridge Debris Removal   | Mobilize sediments, alter stream hydraulics   |  |
|                      |                         | Bridge Debris Removal  Falsework, Cofferdam, or Other Temporary Structure Placement | Mobilize sediments, alter stream hydraulics  Instream habitat displacement, alter stream hydraulics, barrier to passage   | <ul> <li>Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of waquality.</li> <li>Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of waquality.</li> </ul>   |

EffectsTable12-11-01 revise.xls 2 of 3

#### Mechanism of Effects and Potential Outcomes (Continued)

| Maintenance Activity |                |                                  | Mechanisms for Effects/Impacts | Effects with Program   |
|----------------------|----------------|----------------------------------|--------------------------------|--|
| Proximity            | Classification | Components                       |                                | Potential Outcomes   |
|                      | Chemical       | Fuel & Industrial Fluids Present | Release pollutants             | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. |
|                      |                | High Pressure Washing            | Release pollutants             | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. |
|                      |                | Uncured Concrete Used            | Release pollutants             | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. |
|                      |                | Treated Woods (in stream only)   | Release pollutants             | • Protect Watercourse, stream and/or waterbody. • Reduce runoff (of dirt, debris, sediment, and petroleum products) from Maintenance Activity to contribute to the restoration of water quality. |

3 of 3